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THE PLANT DISEASE REPORTER

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The Plant Disease Survey

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THE PLANT DISEASE SURVEY

Vol. IX November 1, 1925 Number 10

Preliminary notices of the annual meeting of the American Phytopathological Society at Kansas City in December have recently been received. The outline of the tentative program follows:

Monday, December 28
Potato disease conference, Lincoln, Nebraska.

Tuesday, December 29
Morning - Regular session of the society.
Afternoon - 1. Joint session with Section G.
2. Extension Pathologists conference.

Wednesday, December 30
Morning - Conference on the teaching of plant pathology.
Afternoon - 1. Joint session with the Potato Association of America on the subject of potato diseases.
2. Session on diseases of fruits and other crops.
Evening - Phytopathologists' Dinner.

Thursday, December 31
Morning - Sessions on diseases of vegetables and cereals.
Afternoon - Joint session with American Society of Agronomy.

POTATO LATE BLIGHT NOT SERIOUS THIS YEAR

Judging from reports received it appears that Phytophthora infestans is not an important factor in late potato production this year.

Maine: Bonde reports some rot as being general, but not much in any one field. (Folsom, Oct. 15)

Connecticut: Late blight present only in minor way and came too late to cause much injury either to vines or as rot of tubers.

Yield is somewhat below average but about the only vegetable crop this year on which growers expect a profitable return. (Clinton, Oct. 15)

West Virginia: Observed at Morgantown and in central part of state. Not a factor in production this year. (Sherwood, Oct. 15)

Michigan: Found in fields in Van Buren County. Infection light and occurred too late to cause much loss. No tuber rot observed. (Kotila, Sept. 30)

Wisconsin: No further development of the disease has been seen or reported. No rot has been reported by the market inspectors to date. (Vaughan, Oct. 15)

MISCELLANEOUS POTATO DISEASE REPORTS FOR OCTOBER 15

Rot caused by Rhizoctonia sp.

Minnesota: A sample of tubers sent in from Ada were badly decayed by a species of Rhizoctonia - probably R. solani. Sclerotia had germinated on surface of tubers and mycelium had penetrated through half the diameter of the tubers. (Sect. Pl. Path.)

Scurf caused by Rhizoctonia

Wisconsin: Less than usual. (Vaughan)

Scab caused by Actinomyces scabies

West Virginia: More injurious than usual. (Sherwood)

Wisconsin: Less than usual. I have personally examined fields in central and northwestern sections and found the crop very free from disease. Professor Milward has also been in the northeastern section and gives a similar report. (Vaughan)

Hopperburn

West Virginia: Quite serious. Estimated loss 25%, but most severe on early potatoes. (Sherwood)

Tipburn

Arkansas: During the extremely dry weather prevalent during the latter part of the growing season, tip and margin burn became very common and had more to do with reduced yields than any other single factor. Leaf hoppers appeared very scarce. (Rosen)

Blackheart (non-par.)

Wisconsin: One lot of Early Rose variety and one lot of Green Mountain variety in Sawyer County show considerable blackheart type of bin rot. Potatoes were dug late in September and put at once into store house. (Vaughan)

KANSAS SWEET POTATO DISEASES

"According to previous records, stemrot, Fusarium batatatis and F. hyperoxysporum, was much less prevalent than every before in Kansas. Whether the weather, or control measures held it in check is not known but in many fields hardly a trace could be found. These fields were from either certified or hill selected seed, treated, bedded in clean soil, and planted either on land where sweet potatoes had not grown for several years, or on land where sweet potatoes had grown only a year or two before. Stemrot was serious in some fields, particularly at Garden City, Kansas City, and Lawrence. This disease probably caused 2% loss for the state in 1925.

"Blackrot, Sphaeronema fimbriatum, was not serious as a field disease in 1925. Just how serious it may be in storage is yet to be determined.

"Scurf or soil stain, Monilochaetes infuscans, was observed in nearly every field examined. It was particularly noticeable at Cimmaron and Dodge City where about 50% of the hills showed infection. It is doubtful if the disease was of economic importance, except as it marred the surface of the potato. Loss for 1925 hardly a trace.

"Septoria batatticola was observed commonly in western Kansas, appearing late and then responsible for 50% defoliation in some cases. Doubtful if much damage was done, since the disease appeared so late. Loss a trace." (D. R. Porter)

CABBAGE DISEASES

Blackrot caused by Bacterium campestre

Ohio: This disease seems to have been much less severe this year than usual. (H. C. Young, Oct. 15)

Wisconsin: Less than usual. Present but of little importance in most fields. (Vaughan, Oct. 15)

Minnesota: Present in all cabbage growing sections in certain fields. One seed treatment demonstration ($HgCl_2$ method) failed to control the disease. (Sect. Pl. Path., Oct. 15)

Yellows caused by Fusarium conglutinans

Ohio: The disease has been very severe in some sections. In the main, the planting of disease resistant strains have lessened the disease, especially in the northern part of the state. (H. C. Young, Oct. 15)

Minnesota: Found in a few fields near St. Paul. Not very prevalent. (Sect. Pl. Path., Oct. 15)

Blackleg caused by Phoma lingam

Connecticut: Two reports of this trouble more or less conspicuous in fields early in the season. (Clinton, Oct. 15)

Minnesota: Very bad in a few fields in the vicinity of St. Paul. Several outbreaks traced to one lot of plants from a seed bed planted in one end of old cabbage field. (Sect. Pl. Path., Oct. 15)

Clubroot caused by Plasmodiophora brassicae

Ohio: This disease has been about as prevalent as any previous year. One field of 50 acres was nearly 100% infected, almost a total loss. It more generally occurs in the smaller gardens. (H. C. Young, Oct. 15)

Minnesota: Present in about the usual amount. Probably a little more abundant than last year. Seems to be spreading slowly throughout cabbage growing sections. (Sect. Pl. Path., Oct. 15)

Softrot caused by Bacillus carotovorus

Wisconsin: Less than usual. Follows injury by blackrot, blackleg, or maggots. (Vaughan, Oct. 15)

Minnesota: Very bad in some fields following an attack of cabbage maggots. Chiefly in form of "stump rot." (Sect. Pl. Path., Oct. 15)

SUGAR BEET DISEASES

Leafspot caused by Phoma betae

Kansas: This disease was about as prevalent as Cercospora. It was quite severe in the latter part of the growing season, particularly in Gray and Ford Counties, of general prevalence and slight damage. (Porter, Oct. 15)

Minnesota: Found at several places in the state. Rather common on the leaves, and causing a slight amount of injury on the roots on peat land in Hennepin County. (Sect. Pl. Path., Oct. 15)

Ohio: This disease can be found quite generally on the leaves of beets, but is not causing the serious loss that Septoria is. (H. C. Young, Oct. 15)

Dryrot caused by Rhizoctonia sp.

Kansas: Rhizoctonia dryrot or crown rot was reported from Dodge City

and a specimen sent in. Subsequent surveys of many fields failed to reveal the general presence of this disease. (Porter, Oct. 15)

Leafspot caused by Septoria sp.

Ohio: Septoria has been quite severe this year and is undoubtedly responsible for the reduction of the sugar content of the beet from 1 to 3%. (H. C. Young, Oct. 15)

Leafspot caused by Cercospora báticola

Wisconsin: No diseases reported. Fields observed have been very healthy. Small amount of leafspot on fields at Experiment Station. (Vaughan, Oct. 15)

MINNESOTA APPLE DISEASES

"Scab caused by Venturia inaequalis was abundant in the northwest section of the state where there were rains early in the season. Unusually scarce in other parts of the state, due to the dry weather.

"Fireblight caused by Bacillus amylovorus was unusually severe on all susceptible varieties throughout the state. The most susceptible varieties of apple are gradually being killed off.

"Rust caused by Gymnosporangium juniperi-virginianae was general wherever red cedars occur.

"Hail injury was more abundant than usual." (Sect. Pl. Path., Sept. 1)

OBSERVATIONS ON WINTER INJURY TO PRUNES AND PEACHES

Dr. Charles Brooks, D. F. Fisher, and C. W. Hungerford made a survey of the prune growing section of Idaho this summer. The outstanding trouble noted was winter injury and concerning it Doctor Brooks writes as follows under date of October 26. He also reports on the winter injury to peaches as observed at Palisades, Colorado.

"We found considerable winter injury on prunes in the Payette and Boise Valleys, Idaho. The location of the injury was usually on the south side of the trunk or in the crotch and often extended from the ground line up to the lower branches, and in some cases the exposed branches were also affected. In some instances the general growth conditions of the tree did not seem to have been affected but in others the branches immediately above the injury were dying. A Cytospora was present on some of the injured areas.

"At Palisades near Grand Junction, Colo. there were heavy losses with peach trees due to the excessively low temperatures of

the preceding winter. The trees near the cliffs were uninjured and bore a good crop while those in the middle of the valley were, in most cases, either killed to the ground or severely injured. The weak trees suffered more than the vigorous ones."

PERENNIAL CANKER, A NEW APPLE DISEASE

Bulletin 217 of the Oregon Agricu,tural Experiment Station, entitled "Perennial Canker of Apple Trees," by S. M. Zeller and Leroy Childs, has recently been received. This bulletin describes a second anthracnose of apple occurring in the Northwest. Since it appears to be undescribed, the name perennial canker has been given as a common name for the disease and Gloeosporium perennans Zeller & Childs is proposed for the name of the fungus.

For some years difficulty has been encountered in controlling what was thought to be Neofabraea malicorticis in certain orchards in the Hood River Valley. It has now been ascertained that at least one of the reasons for this is the occurrence together of these two distinct but very similar diseases. The Northwest anthracnose is easily controlled but the perennial canker, because it is perennial, presents a greater problem, although the fungus is a wound parasite only.

The known distribution of the disease ranges from the Okanogan Valley, British Columbia, to the Willamette Valley, Oregon. It has also been reported from the Spokane and Wenatchee Valleys in Washington, from certain stations along both sides of the Columbia River, especially the Hood River Valley where the disease is well distributed.

The difference between perennial canker and anthracnose is outlined in the following table:

	Perennial canker	Anthracnose
Cause	Gloeosporium perennans	Neofabraea malicorticis
Cankers	Perennial, developing year after year by spread of fungus to healthy tissue	Annual. Not spreading further than limits of first year's growth altho fungus sporulates on deadwood second year
Fruit rot	Brown, soft rot	Same, but tendency toward zonation
Parasitism	Wound parasite	Parasitic, infecting thru uninjured bark
Conidia	Ellipsoid	Curved and hooked
Reaction in culture	Diastatic power weak	Diastatic power strong

Because of their similarity the fruit rots caused by the two organisms have been confused in the past, and anthracnose rot has been reported as occurring in shipments of northwestern apples, inspected in eastern markets, from sections where this fungus is not known to be present. This bulletin will do much to clarify this uncertainty in diagnosis.

Considerable difference seems to have been noted in the susceptibility and resistance of varieties.

RICE DISEASES IN ARKANSAS

"Straighthead (non-par.) - More present than in either of the last two years. Not necessarily on new land. Often without the typical dark green color generally associated with typical straighthead.

"Stemrot caused by Sclerotium oryzae is being found on more farms every year and caused appreciable loss in many cases. The most serious disease of rice in Arkansas this year.

"Blast caused by Piricularia grisae. - More present than in either 1923 or 1924. Rarely causing appreciable loss, but severe in a very few cases.

"Leafspot caused by Helminthosporium (?) - Common. Apparently of little importance." (V. H. Young, Oct. 1)

BACTERIAL STALK ROT OF CORN (BACTERIUM DISSOLVENS)

H. R. Rosen writing on October 1, states that the bacterial stalk rot appeared in epidemic form in localized areas in several counties located in eastern Arkansas. It was very severe during the latter part of June and early in July in Independence County.

HEAD SMUT OF CORN (SOROSPORIUM REILIANUM)

The Division of Plant Pathology of the Washington College of Agriculture on October 1 reported head smut present on corn to a limited extent about Pullman, Washington, but no reports had been received from other parts of the state.

SUGAR CANE DISEASES IN GEORGIA

O. C. Boyd has reported on cane diseases in southern Georgia as of October 15.

"Drouth injury caused the greatest loss in years, yet where the land was prepared and cultivated best, the crop made surprising progress. Many fields, however, are practically a total loss for syrup and are used for fodder and grazing. A large percentage of the apparently well developed cane is pithy. Probable loss around 40%.

"The root disease survey was not started until the latter part of October. A surprising amount of rootknot (Heterodera radicicola) was met with in both the heavy and light drouth stricken areas. Where there existed heavy, more or less uniform infestation of the soil, the entire field would show marked stunting. Fields with only 'spotted' infestation of the soil could easily be recognized by the local stunted spots of cane. The most severe case of rootknot seen was in a one acre field in Worth County, the crop being a 100% loss for syrup. This field was in a creek bottom with more than the usual amount of moisture available throughout the summer. Yet the cane grew no more than two to four feet high. The soil is a loose, sandy soil with a heavy infestation of the nematode, judging from the heavy infection of cotton on three sides of the cane field. First time cane had been planted there. Numerous hills of Cayana 10 scattered throughout the field attained nearly normal height. The severely affected variety was the so-called 'Red' cane.

"The galls ranged in size from minute knots on the fine, fibrous roots to enlargements one-fourth inch in diameter on the larger roots. The galls of more recent development were gorged with larvae, eggs, and females in various stages of development. Males, less common. The species is undoubtedly Heterodera radicicola.

"Mosaic is common in the susceptible varieties in Decatur, Grady, Thomas, Colquit, Brooks, Tift, and Worth Counties. Most of the larger plantings for syrup are planted to the resistant Japanese varieties. Less important this year than drouth and rootknot.

"Redrot (Colletotrichum falcatum) accounted for considerable reduction in stand at the outset of season. Little development later due to unusual dry summer. More noticeable on 'stubble' land. Too early yet for inspection at the mills. However, the disease is common throughout the fields surveyed this month. Affected canes are unusually stunted and void of juice, in some cases very pithy, due to the added effect of the drouth.

"Rootrots (undetermined) - Several types of root and stalk rots were found this month, usually accompanying or following redrot and rootknot. In some cases, the stalk exhibited a rot extending four to ten inches up the cane. Various organisms were present. Root systems of badly affected rootknot plants in some instances were totally rotted."

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